Education

Report to Computing Division

Project Drivers & Scope

QuarkNet/Grid e-Lab	• Enable students to analyze real data delivered online in a collaborative environment.
	  • The QuarkNet/Grid website
	  • A generalized and easily reusable e-Lab Developer Toolkit for other e-Labs, such as CMS test beam data
	
	• Provide *accessible* interfaces and tools for Grid computing resources.
	  • Tools for students to execute Grid jobs via the QuarkNet/Grid website
	  • Tools for developers executing jobs via the Web
	
	• Encourage students to learn data analysis methods that will ready and excite them for a scientific career.
	  • Generating more users with an expanded skill set

Project Deliverables Status

- The QuarkNet/Grid website
  - In use and running right now at http://quarknet.uchicago.edu/elab/cosmic
  - However, we are adding 1-3 features a week to support students
- e-Lab Developer Toolkit
  - Completed refactoring of our design using Java Beans for connectivity with the Virtual Data System (VDS)
  - Completed Hibernate/XDoclet rewrite for database generality
  - We have a preliminary JAR library for developers, but this work will be on-going for the next 6 to 12 months
- Tools for executing Grid jobs via the Web
  - Completed successful Grid3 job using command line tools from Virtual Data Toolkit
  - Building interface for student submission and management of grid jobs - in progress right now
- User base
  - Our active user base has grown from ~ 10 to ~ 70 in the past six months with more additions each week

Project Milestones

- The QuarkNet/Grid Project is an ongoing program of work

- Successes
  - Substantial interface improvements for users
  - Robust user management
  - Provenance tracking for data and data products
  - Image quality enhancements for user graphs
  - Improved stability of the website and performance testing
  - Student and teacher e-Logbooks
  - Improved documentation, Wiki, and CVS

- Future Milestones
  - Enhanced professional development
  - CMS test beam data
  - Fully functional e-Lab Developer Toolkit
  - Fully functional Grid job interface and code
  - Large and developed user base

Effort Profile

- One full-time computing professional: Eric Gilbert
- Liz Quigg part-time
  - Liz has been primarily supporting other needs in Education over the past three months, such as database creation and sharing amongst employees
- 10 hours a week from Paul Nepywoda, an undergraduate at UIUC
- Two full-time QuarkNet staff
  - Facilitate workshops, conduct teacher/student training, liaise with scientists
- Incidental support from the Virtual Data System team at Argonne/UofC.
  - However, we do use many of their code libraries

Risks

- Technical Risks
  - Our software and interfaces depend on the Virtual Data System, an emerging technology

- Schedule Risks
  - None at this time